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MOHRIA HIRSUTA, A NEW FERN SPECIES FROM THE DRAKENSBERG

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Abstract

Mohria hirsuta (Filicales: Schizaeaceae), a new fern species from the Drakensberg, is described.

Uittreksel

Mohria hirsuta (Filicales: Schizaeaceae), 'n nuwe varing species van die Drakensberg, word beskryf.

Key words: *Mohria*, sp. nov., Filicales, Schizaeaceae, pteridophyta, Drakensberg.

Morhia hirsuta J.P.Roux, sp. nov.: filix terrestris; rhizoma prostratum, ad 3 mm diametro, brevis, sparse paleaceum, paleis linearis vel anguste lanceolatis, margine integrum, basi cordatoaffixae, albicans vel pallide castaneus, scariosus, ad 3 mm longae, ad 0,8 mm latae; frondes numerosae, erectopatentes, bipinnatipartitae; stipes teres ad 36 mm longus, pallide castaneus, sparse paleaceus, paleae basales paleis rhizomatis similes sed minores; lamina herbacea, consistentia, lineraris basi attenuatus vel oblongatus; lamina sterilis ad 145 mm longae ad 22 mm latae; lamina fertilis ad 150 mm longae ad 18 mm latae; rhachis teres, dense hirsutus; pinnae: frondes steriles, forma valde variabiles, reniformes, ovatae vel oblongae, irregulariter pinnatifidae, lobis obtusis, margines vadose undulatis, 4–10 mm longae ad 6–7 mm latae, supra sparsis hirsutus, infra sparse hirsutus; pinnae: frondes fertiles, forma valde variabiles, anguste lineares vel oblongae, irregulariter pinnatifidae, lobis obtusis, margine remote serrulatae, ad 10 mm longae ad 7 mm latae, supra sparse glandulosae et hirsutae, infra sparse hirsutae; sporangia sparsis, submarginali in lobi apice; sporae trilateralis, rigidulis, rugulosae, ad 82 μm diametro.

Type: South Africa, Orange Free State—2828 (Bethlehem): Tsheseng, Qwa Qwa, near cave on road to the Sentinel (-DB), *Roux 907* (NBG, holotype!; K, PRE, isotypes!). (Fig. 1 A-E & 2A-C).

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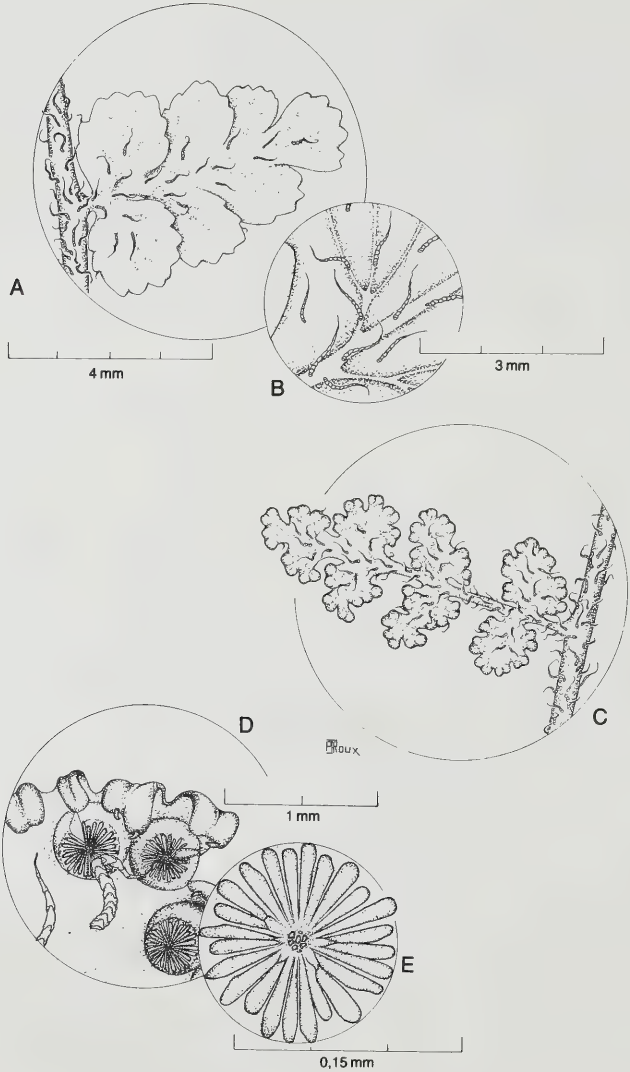

FIG. 1
Mohria hirsuta J.P.Roux, sp. nov. *Roux 907.* 1A Sterile mid-pinna; 1B. Magnification of sterile pinna section showing uniseriate hairs; 1C. Fertile mid-pinna; 1D. Lower surface of fertile pinna showing the large globular submarginal sporangia; 1E. Annulus cells.

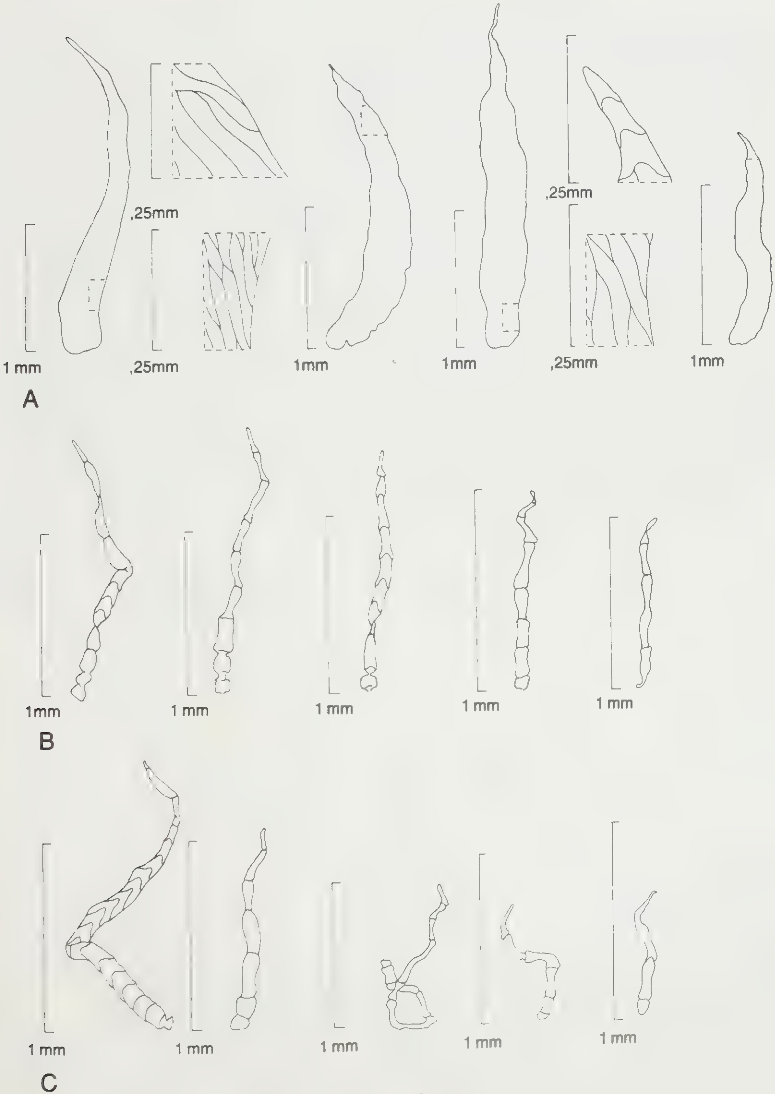

FIG. 2.
Mohria hirsuta J.P.Roux, sp. nov *Roux 907*. A. Stipe base scales; B. Rachis hairs; C. Lamina hairs.

Rhizome short, prostrate, up to 3 mm diam., sparsely set with scarious, linear to narrow-lanceolate, cordate, entire, white to pale brown scales, up to 3 mm long × 0,8 mm wide; fronds numerous, erect, crowded; stipe up to 36 mm long × 1 mm diam., terete, pale brown, sparsely set with scarious, narrow-lanceolate, entire, pale brown scales; rachis firm, terete, erect, somewhat flexuose towards the apex, sparsely set with scales similar to those on the stipe at lamina base, absent at apex, densely hirsute to apex, hairs uniseriate, pale brown to white; lamina bipinnatifid, firmly herbaceous, oblanceolate to linear-attenuate in outline, pinnae opposite to distant, reniform in outline at base, ovate to lanceolate in outline to apex, widely spaced at base, more closely spaced towards the apex and overlapping in the sterile frond, basal pinnae up to 4 mm × 6 mm, midpinnae up to 10 mm × 7 mm; pinnules crowded and overlapping in sterile frond, distant when fertile, rotund to ovate-obtuse in outline, less deeply dissected to base and apex, lobed; apical margin shallowly undulate to bluntly dentate, ventral and dorsal surfaces sparsely to densely hirsute, hairs uniseriate, up to 1 mm long, white; sterile frond up to 150 mm long × 22 mm wide; fertile frond up to 180 mm long × 18 mm wide; sporangia borne near apices of lobes of apical pinnae only; spores pale brown, trilete, ridged, rugulose, up to 82 μm diam.

MATERIAL EXAMINED

ORANGE FREE STATE—2828 (Bethlehem): NW slopes of The Dome (-DB), *Roux 1214* (NBG).

—2829 (Harrismith): Seheletwane, Farm Klavervlei (-CA), on Cave Sandstone rock ledges, *Roux 1068* (NBG); Summit of Seheletwane, on low rock ledges, *Roux 1069* (NBG); Seheletwane, common on summit above forest patches, *Roux 1524* (NBG).

NATAL—2829 (Harrismith): Rare on E-facing slope among Cave Sandstone boulders (-CA), *Roux 1508* (NBG).

LESOTHO—2929 (Underberg): Sehlabathebe National Park (-CC), rare in exposed seasonally moist conditions in rock crevices at the pools, *Roux 1457* (NBG).

PHYTOGEOGRAPHY AND ECOLOGY

Mohria hirsuta occurs at altitudes ranging between 2 000 m and 2 800 m in the topographically much-dissected mountainous foothills of the Natal Drakensberg (Fig. 3). The climate is severe throughout its range of distribution and snow is experienced during the period June to August and falls often occur as late as September. They are, however, of short duration.

M. hirsuta always forms large colonies in shallow soils in completely exposed conditions on the lower edges of plant islands or in rock crevices on east to north east-facing Cave Sandstone ridges. Plants have also been recorded on exposed stony soils derived from the Basalt formation at Qwa Qwa.

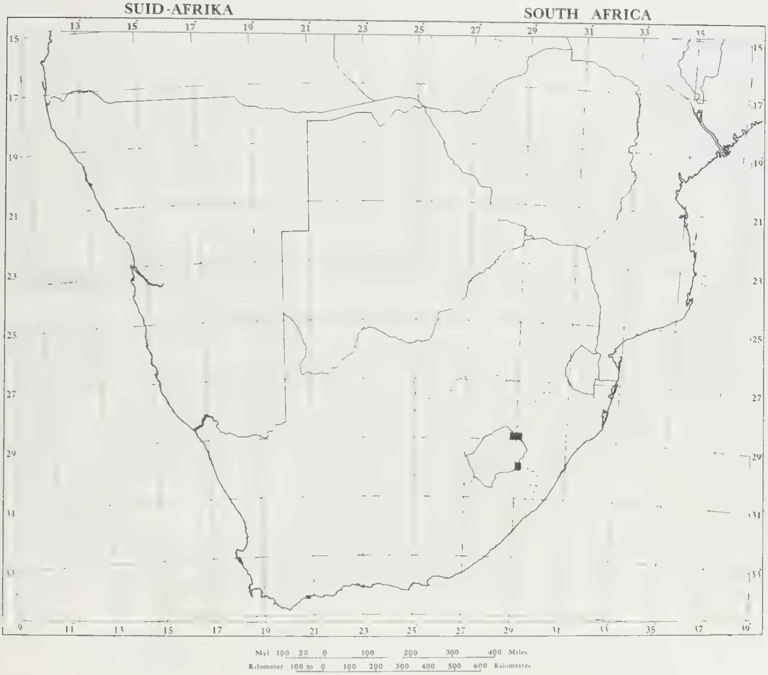
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FIG. 3.
Mohria hirsuta J.P.Roux, sp. nov. Distribution range.

Because of the infrequent snowfalls and the shallow soils, the plant islands often become extremely dry during the period from May to September, causing the plants to shrivel up entirely. However, a continual seepage from higher up may be experienced during the period November to January.

M. hirsuta is restricted to meso-xerophilous habitats. The seasonal pattern appears to be regular and the numerous mesomorphic fronds which are produced simultaneously during December to February are poikilohydrous. Fertile fronds were collected in December and February. Effective vegetative reproduction takes place by the division of the hemicryptophytic rhizome which is also highly fire-resistant.

DISCUSSION

Mohria hirsuta differs from *M. caffrorum* (L.) Desv. in a number of characters, of which the most significant are the hirsute rachis and lamina.

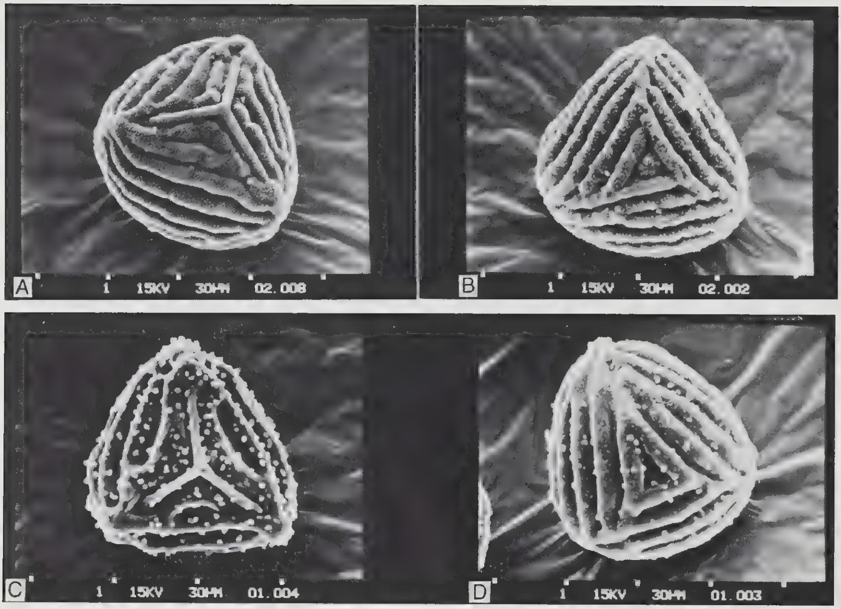

Fig. 4.
A-B. *Mohria hirsuta* J.P.Roux, sp. nov. *Roux 907*. A. Proximal view of spore; B. Distal view of spore. C-D. *Mohria caffrorum, Roux 947*. A. Proximal view of spore; B. Distal view of spore.

Similar uniseriate hairs are also common on the juvenile fronds of the young developing sporophyte. This, however, is absent from *M. caffrorum. M. hirsuta* also forms large dense colonies either in exposed or partially sheltered conditions whereas *M. caffrorum* generally occurs as individuals or in small groups consisting of a few plants. The lamina of *M. hirsuta* is less dissected and never reaches the dimensions of *M. caffrorum*. The rhizome and stipe scales are also generally smaller and paler with cell structure less complex than that of *M. caffrorum*. The fimbriate scale margins which are a common feature in especially xeromorphic forms of *M. caffrorum* have not as yet been observed in *M. hirsuta*. The spores of *M. hirsuta* are trilete, ridged and minutely rugulose (Fig. 4 A-B) while those of *M. caffrorum* show variations between trilete, ridged and sparsly set with large verrucae (Fig. 4 C-D) to deeply ridged with a coarse rugulose ornamentation both on the ridges and in between. The spores of *M. caffrorum* vary between 70 and 90 μm in diameter.

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